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Listing of Claims:

1. (**Original**) A process for formation of a layer of tantalum pentoxide (Ta_2O_5) on a carrier material, comprising:

heating carrier material to a heating temperature of between approximately 200°C and 400°C; and

circulating a gas mixture comprising tert-butyliminotris (diethylamino) tantalum (t-BuN=$Ta(NEt_2)_3$) in contact with the heated carrier material under an oxidizing atmosphere thereby forming a layer of tantalum pentoxide (Ta_2O_5) on the carrier material, the partial pressure of the tert-butyliminotris (diethylamino) tantalum being greater than or equal to 25 mTorr.

2. (**Original**) The process according to Claim 1, wherein the heating temperature is between approximately 300°C and 350°C.

3. (**Original**) The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the partial pressure of the tert-butyliminotris (diethylamino) tantalum is less than the vapor pressure of tert-butyliminotris (diethylamino) tantalum corresponding to the temperature of the coldest point in the chamber.

4. (**Original**) The process according to Claim 1, wherein the partial pressure of the tert-butyimiotris (diethylmino) tantalum is between approximately 65 mTorr and 70 mTorr.

5. **(Original)** The process according to Claim 1, wherein the gas mixture comprises oxygen.

6. **(Currently Amended)** The process according to Claim 1, wherein the gas mixture comprises a carrier gas. ~~, for example nitrogen.~~

7. **(Previously Presented)** The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the replacement time of the gas mixture in the chamber is between 0.1 second and 10 minutes.

8. **(Currently Amended)** The process according to Claim 1, wherein the carrier material is a semi-conducting material. ~~, for example silicon.~~

9. **(Original)** The process according to Claim 1, wherein the carrier material is a metallic material.

10. **(Previously Presented)** The process according to Claim 1, wherein the carrier material is chosen from the group formed by titanium nitride, tantalum nitride, copper, platinum, aluminum, titanium, tantalum and ruthenium.

11. **(Original)** The process according to Claim 1, wherein the carrier material is a dielectric material.

12. **(Previously Presented)** The process according to Claim 1, wherein the carrier material is chosen from the group formed by silicon dioxide (SiO_2), silicon nitride (Si_3N_4), alumina (Al_2O), ZrO_2 and HfO_2.

13. **(Currently Amended)** The process according to Claim 1, wherein the thickness of the layer of tantalum pentoxide formed is of the order of a few tens of nanometers. ~~, for example 44 nanometers.~~

14. **(Original)** The process according to Claim 1, wherein the carrier material is positioned on a circular wafer having a diameter of substantially one of 200 mm and 300 mm.

15. **(Original)** The process according to Claim 1, wherein the layer of tantalum pentoxide is for incorporating in one or more electronic integrated circuits.

16-39. **Canceled**

40. **(Previously Presented)** The process according to Claim 1, wherein the gas mixture is circulated in a chamber in which the carrier material is placed and in that the replacement time of the gas mixture in the chamber is between 1 second and 10 seconds.

41. **(New)** The process according to Claim 1, wherein the gas mixture comprises nitrogen as a carrier gas.

42. (New) The process according to Claim 1, wherein the carrier material is silicon.

43. (New) The process according to Claim 1, wherein the thickness of the layer of tantalum pentoxide formed is approximately 44 nanometers.